SEQUENCE LISTING

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<120> Composition for and Treatment of Demyelinating Diseases and Paralysis By Administration of Remyelating Agents

<130> 034008-061

<140> US 10/763,424
<141> 2004-01-26

<160> 71

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 360
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(360)

<400> 1

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gtc aaa ctg cag cag tct ggg gca gag ctt gtg aag cca ggg gcc tca   48
Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala Ser
 1               5                  10                  15

gtc aag ttg ttc tgc aca gct tct ggc ttc aac att aaa gac acc tat   96
Val Lys Leu Phe Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr Tyr
            20                  25                  30

atg cac tgg gtg aag cag agg cct caa cag ggc ctg gag tgg att gga   144
Met His Trp Val Lys Gln Arg Pro Gln Gln Gly Leu Glu Trp Ile Gly
        35                  40                  45

agg att gat cct gcg agt ggc gat act aaa tat gac ccg aag ttc cag   192
Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp Pro Lys Phe Gln
    50                  55                  60

gtc aag gcc act att aca gcg gac acg tcc tcc aac aca gcc tgg ctg   240
Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Trp Leu
65                  70                  75                  80

cag ctc agc agc ctg aca tct gag gac act gcc gtc tac tac tgt gca   288
Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala
                85                  90                  95
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gac gga atg tgg gta tca acg gga tat gct ctg gac ttc tgg ggc caa   336
Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp Phe Trp Gly Gln
            100                 105                 110

ggg acc acg gtc acc gtc tcc tca                                   360
Gly Thr Thr Val Thr Val Ser Ser
        115                 120
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<210> 2
<211> 120
<212> PRT
<213> Homo sapiens

<400> 2

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Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala Ser
 1               5                  10                  15
Val Lys Leu Phe Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr Tyr
            20                  25                  30
Met His Trp Val Lys Gln Arg Pro Gln Gln Gly Leu Glu Trp Ile Gly
        35                  40                  45
Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp Pro Lys Phe Gln
    50                  55                  60
Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Trp Leu
65                  70                  75                  80
Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala
                85                  90                  95
Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp Phe Trp Gly Gln
            100                 105                 110
Gly Thr Thr Val Thr Val Ser Ser
        115                 120
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<210> 3
<211> 318
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(318)

<400> 3

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agt att gtg atg acc cag act ccc aaa ttc ctg ctt gtt tca gca gga   48
Ser Ile Val Met Thr Gln Thr Pro Lys Phe Leu Leu Val Ser Ala Gly
 1               5                  10                  15

gac agg gtt acc ata acc tgc aag gcc agt cag agt gtg act aat gat   96
Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val Thr Asn Asp
            20                  25                  30

gta gct tgg tac caa cag aag cca ggg cag tct cct aaa ctg ctg ata   144
Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile
        35                  40                  45

tat tat gca tcc aat cgc tac act gga gtc cct gat cgc ttc act ggc   192
Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg Phe Thr Gly
    50                  55                  60
```

```
agt gga tat ggg acg gat ttc act ttc acc atc agc act gtg cag gct   240
Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Thr Val Gln Ala
 65                  70                  75                  80

gaa gac ctg gca gtt tat ttc tgt cag cag gat tat agc tct ccg tac   288
Glu Asp Leu Ala Val Tyr Phe Cys Gln Gln Asp Tyr Ser Ser Pro Tyr
                85                  90                  95

acg ttc gga ggg ggg acc aag ctg gag atc                          318
Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile
            100                 105


<210> 4
<211> 106
<212> PRT
<213> Homo sapiens

<400> 4
Ser Ile Val Met Thr Gln Thr Pro Lys Phe Leu Leu Val Ser Ala Gly
 1               5                  10                  15
Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val Thr Asn Asp
            20                  25                  30
Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile
        35                  40                  45
Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg Phe Thr Gly
    50                  55                  60
Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Thr Val Gln Ala
65                  70                  75                  80
Glu Asp Leu Ala Val Tyr Phe Cys Gln Gln Asp Tyr Ser Ser Pro Tyr
                85                  90                  95
Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile
            100                 105


<210> 5
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<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(429)

<400> 5
atg gac tgg acc tgg agg gtc ttc tgc ttg ctg gct gta gca cca ggt   48
Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1               5                  10                  15

gcc cac tcc cag gtc caa ctg cag gag tcc ggt gct gaa gtt gtt aaa   96
Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Ala Glu Val Val Lys
            20                  25                  30

ccg ggt tcc tcc gtt aaa ctg tcc tgc aaa gct tcc ggt ttc aac atc   144
Pro Gly Ser Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Phe Asn Ile
        35                  40                  45

aaa gac acc tac atg cac tgg gtt aaa cag cgt ccg ggt cag ggt ctg   192
Lys Asp Thr Tyr Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu
```

```
     50                  55                  60

gaa tgg atc ggt cgt atc gac ccg gct tcc ggt gac acc aaa tac gac   240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
 65                  70                  75                  80

ccg aaa ttc cag gtt aaa gct acc atc acc gct gac gaa tcc acc tcc   288
Pro Lys Phe Gln Val Lys Ala Thr Ile Thr Ala Asp Glu Ser Thr Ser
                85                  90                  95

acc gct tac ctg gaa ctg tcc tcc ctg cgt tcc gaa gac acc gct gtt   336
Thr Ala Tyr Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
            100                 105                 110

tac tac tgc gct gac ggt atg tgg gtt tcc acc ggt tac gct ctg gac   384
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
        115                 120                 125

ttc tgg ggt cag ggt acc acg gtc acc gtc tcc tca ggt gag tcc       429
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
    130                 135                 140
```

<210> 6
<211> 143
<212> PRT
<213> Homo sapiens

<400> 6

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Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1               5                  10                  15
Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Ala Glu Val Val Lys
            20                  25                  30
Pro Gly Ser Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Phe Asn Ile
        35                  40                  45
Lys Asp Thr Tyr Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu
    50                  55                  60
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
65                  70                  75                  80
Pro Lys Phe Gln Val Lys Ala Thr Ile Thr Ala Asp Glu Ser Thr Ser
                85                  90                  95
Thr Ala Tyr Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
            100                 105                 110
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
        115                 120                 125
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
    130                 135                 140
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<210> 7
<211> 383
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
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<400> 7
atg ggt tgg tcc tgc atc atc ctg ttc ctg gtt gct acc gct acc ggt 48
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
1 5 10 15

gtt cac tcc atc gtt atg acc cag tcc ccg gac tcc ctg gct gtt tcc 96
Val His Ser Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser
20 25 30

ctg ggt gaa cgt gtt acc atc aac tgc aaa gct tcc cag tcc gtt acc 144
Leu Gly Glu Arg Val Thr Ile Asn Cys Lys Ala Ser Gln Ser Val Thr
35 40 45

aac gac gtt gct tgg tac cag cag aaa ccg ggt cag tcc ccg aaa ctg 192
Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu
50 55 60

ctg atc tac tac gct tcc aac cgt tac acc ggt gtt ccg gac cgt ttc 240
Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg Phe
65 70 75 80

tcc ggt tcc ggt tac ggt acc gac ttc acc ttc acc atc tcc tcc gtt 288
Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Val
85 90 95

cag gct gaa gac gtt gct gtt tac tac tgc cag cag gac tac tcc tcc 336
Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Asp Tyr Ser Ser
100 105 110

ccg tac acc ttc ggt ggt ggt acc aaa ctg gag atc taa ggatcctc 383
Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile *
115 120

<210> 8
<211> 124
<212> PRT
<213> Homo sapiens

<400> 8
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
1 5 10 15
Val His Ser Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser
20 25 30
Leu Gly Glu Arg Val Thr Ile Asn Cys Lys Ala Ser Gln Ser Val Thr
35 40 45
Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu
50 55 60
Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg Phe
65 70 75 80
Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Val
85 90 95
Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Asp Tyr Ser Ser
100 105 110
Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile
115 120

<210> 9

<211> 429
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(429)

<400> 9

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atg gac tgg acc tgg agg gtc ttc tgc ttg ctg gct gta gca cca ggt   48
Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1               5                  10                  15

gcc cac tcc cag gtc caa ctg cag gag agc ggt cca ggt ctt gtg aga   96
Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
            20                  25                  30

cct agc cag acc ctg agc ctg acc tgc acc gtg tct ggc ttc aac att   144
Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
        35                  40                  45

aaa gac acc tat atg cac tgg gtg aga cag cca cct gga cga ggt ctt   192
Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
    50                  55                  60

gag tgg att gga agg att gat cct gcg agt ggc gat act aaa tat gac   240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
65                  70                  75                  80

ccg aag ttc cag gtc aga gtg aca atg ctg gta gac acc agc agc aac   288
Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
                85                  90                  95

aca gcc tgg ctg aga ctc agc agc gtg aca gcc gcc gac acc gcg gtc   336
Thr Ala Trp Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
            100                 105                 110

tat tat tgt gca gac gga atg tgg gta tca acg gga tat gct ctg gac   384
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
        115                 120                 125

ttc tgg ggc caa ggg acc acg gtc acc gtc tcc tca ggt gag tcc       429
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
    130                 135                 140
```

<210> 10
<211> 143
<212> PRT
<213> Homo sapiens

<400> 10

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Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1               5                  10                  15
Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
            20                  25                  30
Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
        35                  40                  45
```

```
Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
    50                  55                  60
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
65                  70                  75                  80
Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
                85                  90                  95
Thr Ala Trp Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
            100                 105                 110
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
        115                 120                 125
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
    130                 135                 140
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<210> 11
<211> 429
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(429)

<400> 11

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atg gac tgg acc tgg agg gtc ttc tgc ttg ctg gct gta gca cca ggt   48
Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1               5                  10                  15

gcc cac tcc cag gtc caa ctg cag gag agc ggt cca ggt ctt gtg aga   96
Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
            20                  25                  30

cct agc cag acc ctg agc ctg acc tgc acc gtg tct ggc ttc aac att   144
Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
        35                  40                  45

aaa gac acc tat atg cac tgg gtg aga cag cca cct gga cga ggt ctt   192
Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
    50                  55                  60

gag tgg att gga agg att gat cct gcg agt ggc gat act aaa tat gac   240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
65                  70                  75                  80

ccg aag ttc cag gtc aaa gcg aca att acg gca gac acc agc agc aac   288
Pro Lys Phe Gln Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn
                85                  90                  95

cag ttc agc ctg aga ctc agc agc gtg aca gcc gcc gac acc gcg gtc   336
Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
            100                 105                 110

tat tat tgt gca gac gga atg tgg gta tca acg gga tat gct ctg gac   384
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
        115                 120                 125

ttc tgg ggc caa ggg acc acg gtc acc gtc tcc tca ggt gag tcc       429
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
    130                 135                 140
```

<210> 12
<211> 143
<212> PRT
<213> Homo sapiens

<400> 12
Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1   5   10   15
Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
            20   25   30
Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
        35   40   45
Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
    50   55   60
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
65   70   75   80
Pro Lys Phe Gln Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn
                85   90   95
Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
            100   105   110
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
        115   120   125
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
    130   135   140

<210> 13
<211> 372
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(372)

<400> 13
cag gtc caa ctg cag gag agc ggt cca ggt ctt gtg aga cct agc cag 48
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg Pro Ser Gln
 1   5   10   15

acc ctg agc ctg acc tgc acc gtg tct ggc ttc aac att aaa gac acc 96
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile Lys Asp Thr
            20   25   30

tat atg cac tgg gtg aga cag cca cct gga cga ggt ctt gag tgg att 144
Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu Glu Trp Ile
        35   40   45

gga agg att gat cct gcg agt ggc gat act aaa tat gac ccg aag ttc 192
Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp Pro Lys Phe
    50   55   60

cag gtc aga gtg aca atg ctg gta gac acc agc agc aac cag ttc agc 240
Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn Gln Phe Ser
65   70   75   80

```
ctg aga ctc agc agc gtg aca tct gag gac acc gcg gtc tat tat tgt   288
Leu Arg Leu Ser Ser Val Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

gca gac gga atg tgg gta tca acg gga tat gct ctg gac ttc tgg ggc   336
Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp Phe Trp Gly
            100                 105                 110

caa ggg acc acg gtc acc gtc tcc tca ggt gag tcc                  372
Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
        115                 120
```

<210> 14
<211> 124
<212> PRT
<213> Homo sapiens

<400> 14

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Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg Pro Ser Gln
 1               5                  10                  15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile Lys Asp Thr
            20                  25                  30
Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu Glu Trp Ile
        35                  40                  45
Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp Pro Lys Phe
    50                  55                  60
Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn Gln Phe Ser
65                  70                  75                  80
Leu Arg Leu Ser Ser Val Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp Phe Trp Gly
            100                 105                 110
Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
        115                 120
```

<210> 15
<211> 429
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(429)

<400> 15

```
atg gac tgg acc tgg agg gtc ttc tgc ttg ctg gct gta gca cca ggt   48
Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1               5                  10                  15

gcc cac tcc cag gtc caa ctg cag gag agc ggt cca ggt ctt gtg aga   96
Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
            20                  25                  30

cct agc cag acc ctg agc ctg acc tgc acc gtg tct ggc ttc aac att  144
Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
        35                  40                  45
```

```
aaa gac acc tat atg cac tgg gtg aaa cag cga cct gga cga ggt ctt   192
Lys Asp Thr Tyr Met His Trp Val Lys Gln Arg Pro Gly Arg Gly Leu
     50                  55                  60

gag tgg att gga agg att gat cct gcg agt ggc gat act aaa tat gac   240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
 65                  70                  75                  80

ccg aag ttc cag gtc aga gtg aca atg ctg gta gac acc agc agc aac   288
Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
                 85                  90                  95

cag ttc agc ctg aga ctc agc agc gtg aca gcc gcc gac acc gcg gtc   336
Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
            100                 105                 110

tat tat tgt gca gac gga atg tgg gta tca acg gga tat gct ctg gac   384
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
        115                 120                 125

ttc tgg ggc caa ggg acc acg gtc acc gtc tcc tca ggt gag tcc       429
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
    130                 135                 140
```

<210> 16
<211> 143
<212> PRT
<213> Homo sapiens

<400> 16

```
Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1               5                  10                  15
Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
            20                  25                  30
Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
        35                  40                  45
Lys Asp Thr Tyr Met His Trp Val Lys Gln Arg Pro Gly Arg Gly Leu
    50                  55                  60
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
65                  70                  75                  80
Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
                85                  90                  95
Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
            100                 105                 110
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
        115                 120                 125
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
    130                 135                 140
```

<210> 17
<211> 429
<212> DNA
<213> Homo sapiens

<220>
<221> CDS

<222> (1)...(429)

<400> 17

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atg gac tgg acc tgg agg gtc ttc tgc ttg ctg gct gta gca cca ggt   48
Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1               5                  10                  15

gcc cac tcc cag gtc caa ctg cag gag agc ggt cca ggt ctt gtg aga   96
Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
            20                  25                  30

cct agc cag acc ctg agc ctg acc tgc acc gcg tct ggc ttc aac att  144
Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Ala Ser Gly Phe Asn Ile
        35                  40                  45

aaa gac acc tat atg cac tgg gtg aga cag cca cct gga cga ggt ctt  192
Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
    50                  55                  60

gag tgg att gga agg att gat cct gcg agt ggc gat act aaa tat gac  240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
65                  70                  75                  80

ccg aag ttc cag gtc aga gtg aca atg ctg gta gac acc agc agc aac  288
Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
                85                  90                  95

cag ttc agc ctg aga ctc agc agc gtg aca gcc gcc gac acc gcg gtc  336
Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
            100                 105                 110

tat tat tgt gca gac gga atg tgg gta tca acg gga tat gct ctg gac  384
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
        115                 120                 125

ttc tgg ggc caa ggg acc acg gtc acc gtc tcc tca ggt gag tcc      429
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
    130                 135                 140
```

<210> 18
<211> 143
<212> PRT
<213> Homo sapiens

<400> 18

```
Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1               5                  10                  15
Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
            20                  25                  30
Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Ala Ser Gly Phe Asn Ile
        35                  40                  45
Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
    50                  55                  60
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
65                  70                  75                  80
Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
                85                  90                  95
```

```
Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
            100                 105                 110
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
        115                 120                 125
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
    130                 135                 140
```

<210> 19
<211> 386
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(386)

<400> 19

```
atg ggt tgg tcc tgc atc atc ctg ttc ctg gtt gct acc gct acc ggt   48
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
 1               5                  10                  15

gtt cac tcc gac atc cag ctg acc cag agc cca agc agc ctg agc gcc   96
Val His Ser Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala
            20                  25                  30

agc gtg ggt gac aga gtg acc atc acc tgt aag gcc agt cag agt gtg   144
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val
        35                  40                  45

act aat gat gta gct tgg tac cag cag aag cca ggt aag gct cca aag   192
Thr Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
    50                  55                  60

ctg ctg atc tac tat gca tcc aat cgc tac act ggt gtg cca agc aga   240
Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg
65                  70                  75                  80

ttc agc ggt agc ggt agc ggt acc gac ttc acc ttc acc atc agc agc   288
Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
                85                  90                  95

ctc cag cca gag gac atc gcc acc tac tac tgc cag cag gat tat agc   336
Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser
            100                 105                 110

tct ccg tac acg ttc ggc caa ggg acc aag gtg gaa atc aaa cgt aag   384
Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys
        115                 120                 125

tg                                                                386
```

<210> 20
<211> 128
<212> PRT
<213> Homo sapiens

<400> 20

```
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
```

```
 1               5                  10                  15
Val His Ser Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala
            20                  25                  30
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val
        35                  40                  45
Thr Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
    50                  55                  60
Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg
65                  70                  75                  80
Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
                85                  90                  95
Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser
            100                 105                 110
Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys
        115                 120                 125
```

<210> 21
<211> 386
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(386)

<400> 21

```
atg ggt tgg tcc tgc atc atc ctg ttc ctg gtt gct acc gct acc ggt   48
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
 1               5                  10                  15

gtc cac tcc agc atc gtg atg acc cag agc cca agc agc ctg agc gcc   96
Val His Ser Ser Ile Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
            20                  25                  30

agc gtg ggt gac aga gtg acc atc acc tgt aag gcc agt cag agt gtg   144
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val
        35                  40                  45

act aat gat gta gct tgg tac cag cag aag cca ggt aag gct cca aag   192
Thr Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
    50                  55                  60

ctg ctg atc tac tat gca tcc aat cgc tac act ggt gtg cca gat aga   240
Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg
65                  70                  75                  80

ttc agc ggt agc ggt tat ggt acc gac ttc acc ttc acc atc agc agc   288
Phe Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
                85                  90                  95

ctc cag cca gag gac atc gcc acc tac tac tgc cag cag gat tat agc   336
Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser
            100                 105                 110

tct ccg tac acg ttc ggc caa ggg acc aag gtg gaa atc aaa cgt aag   384
Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys
        115                 120                 125
```

tg 386

<210> 22
<211> 128
<212> PRT
<213> Homo sapiens

<400> 22

```
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
 1               5                  10                  15
Val His Ser Ser Ile Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
            20                  25                  30
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val
        35                  40                  45
Thr Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
    50                  55                  60
Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg
65                  70                  75                  80
Phe Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
                85                  90                  95
Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser
            100                 105                 110
Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys
        115                 120                 125
```

<210> 23
<211> 386
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(386)

<400> 23

```
atg ggt tgg tcc tgc atc atc ctg ttc ctg gtt gct acc gct acc ggt   48
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
 1               5                  10                  15

gtc cac tcc gac atc cag atg acc cag agc cca agc agc ctg agc gcc   96
Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
            20                  25                  30

agc gtg ggt gac aga gtg acc atc acc tgt aag gcc agt cag agt gtg   144
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val
        35                  40                  45

act aat gat gta gct tgg tac cac cag aag cca ggt aag gct cca aag   192
Thr Asn Asp Val Ala Trp Tyr His Gln Lys Pro Gly Lys Ala Pro Lys
    50                  55                  60

ctg ctg atc tac tat gca tcc aat cgc tac act ggt gtg cca gat aga   240
Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg
65                  70                  75                  80

ttc agc ggt agc ggt tat ggt acc gac ttc acc ttc acc atc agc agc   288
Phe Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
                85                  90                  95
```

```
ctc cag cca gag gac atc gcc acc tac tac tgc cag cag gat tat agc   336
Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser
            100                 105                 110

tct ccg tac acg ttc ggc caa ggg acc aag gtg gaa atc aaa cgt aag   384
Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys
        115                 120                 125

tg                                                                386

<210> 24
<211> 128
<212> PRT
<213> Homo sapiens

<400> 24
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
 1               5                  10                  15
Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
            20                  25                  30
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val
        35                  40                  45
Thr Asn Asp Val Ala Trp Tyr His Gln Lys Pro Gly Lys Ala Pro Lys
    50                  55                  60
Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg
65                  70                  75                  80
Phe Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
                85                  90                  95
Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser
            100                 105                 110
Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys
        115                 120                 125


<210> 25
<211> 37
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (20)...(37)

<400> 25
cagaaagctt gccgccacc atg aga ccg tct att cag                      37
                     Met Arg Pro Ser Ile Gln
                      1               5


<210> 26
<211> 6
<212> PRT
<213> Homo sapiens

<400> 26
Met Arg Pro Ser Ile Gln
 1               5
```

<210> 27
<211> 35
<212> DNA
<213> Homo sapiens

<400> 27
ccgaggatcc actcacgttt gatttccagc ttggt 35

<210> 28
<211> 37
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (20)...(37)

<400> 28
cagaaagctt gccgccacc atg aaa tgc agc tgg gtc 37
Met Lys Cys Ser Trp Val
1 5

<210> 29
<211> 6
<212> PRT
<213> Homo sapiens

<400> 29
Met Lys Cys Ser Trp Val
1 5

<210> 30
<211> 33
<212> DNA
<213> Homo sapiens

<400> 30
ccgaggatcc actcacctga ggagacggtg act 33

<210> 31
<211> 39
<212> DNA
<213> Homo sapiens

<400> 31
gatggtgact ctatctccta cagatgcaga cagtgagga 39

<210> 32
<211> 32
<212> DNA
<213> Homo sapiens

<400> 32
ctgtaggaga tagagtcacc atcacttgca ag 32

<210> 33
<211> 39

<212> DNA
<213> Homo sapiens

<400> 33
aggagctttt ccaggtgtct gttggtacca agccatata 39

<210> 34
<211> 41
<212> DNA
<213> Homo sapiens

<400> 34
accaacagac acctggaaaa gctcctaggc tgctcataca t 41

<210> 35
<211> 40
<212> DNA
<213> Homo sapiens

<400> 35
gcaggctgct gatggtgaaa gtataatctc tcccagaccc 40

<210> 36
<211> 42
<212> DNA
<213> Homo sapiens

<400> 36
actttcacca tcagcagcct gcagcctgaa gatattgcaa ct 42

<210> 37
<211> 59
<212> DNA
<213> Homo sapiens

<400> 37
ccgaggatcc actcacgttt gatttccacc ttggtgcctt gaccgaacgt ccacagatt 59

<210> 38
<211> 33
<212> DNA
<213> Homo sapiens

<400> 38
ggaaaagctc ctaggctgct catatattac aca 33

<210> 39
<211> 38
<212> DNA
<213> Homo sapiens

<400> 39
ccgaggatcc actcacgttt gatttccacc tttgtgcc 38

<210> 40
<211> 51
<212> DNA
<213> Homo sapiens

<400> 40
aacccagtgt atataggtgt ctttaatgtt gaaaccgcta gctttacagc t 51

<210> 41
<211> 67
<212> DNA
<213> Homo sapiens

<400> 41
aaagacacct atatacactg ggttagacag gcccctggcc aaaggctgga gtggatggga 60
aggattg 67

<210> 42
<211> 26
<212> DNA
<213> Homo sapiens

<400> 42
gacccggccc tggaacttcg ggtcat 26

<210> 43
<211> 66
<212> DNA
<213> Homo sapiens

<400> 43
gacccgaagt tccagggccg ggtcaccatc accgcagaca cctctgccag caccgcctac 60
atggaa 66

<210> 44
<211> 64
<212> DNA
<213> Homo sapiens

<400> 44
ccatagcata gaccccgtag ttaccataat atccctctct ggcgcagtag tagactgcag 60
tgtc 64

<210> 45
<211> 63
<212> DNA
<213> Homo sapiens

<400> 45
ggtaactacg gggtctatgc tatggactac tggggtcaag gaacccttgt caccgtctcc 60
tca 63

<210> 46
<211> 37
<212> DNA
<213> Homo sapiens

<400> 46
ccagggccgg gtcaccatca ccagagacac ctctgcc 37

<210> 47
<211> 27
<212> DNA
<213> Homo sapiens

<400> 47
caggcccctg gccaagggct ggagtgg 27

<210> 48
<211> 17
<212> DNA
<213> Homo sapiens

<400> 48
tacgcaaacc gcctctc 17

<210> 49
<211> 18
<212> DNA
<213> Homo sapiens

<400> 49
gagtgcacca tatgcggt 18

<210> 50
<211> 116
<212> PRT
<213> Homo sapiens

<400> 50

Gln	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys	Lys	Pro	Gly	Ala
1				5					10					15	
Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Ser	Phe	Thr	Ser	Tyr
			20					25					30		
Tyr	Ile	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln	Gly	Leu	Glu	Trp	Val
		35					40					45			
Gly	Tyr	Ile	Asp	Pro	Phe	Asn	Gly	Gly	Thr	Ser	Tyr	Asn	Gln	Lys	Phe
	50					55					60				
Lys	Gly	Lys	Val	Thr	Met	Thr	Val	Asp	Thr	Ser	Thr	Asn	Thr	Ala	Tyr
65					70					75					80
Met	Glu	Leu	Ser	Ser	Leu	Arg	Ser	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys
				85					90					95	
Ala	Arg	Gly	Gly	Asn	Arg	Phe	Ala	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val
			100					105					110		
Thr	Val	Ser	Ser												
			115												

<210> 51
<211> 483
<212> DNA
<213> Mouse

<220>
<221> CDS
<222> (53)...(432)

<400> 51
atgagggccc ctgctcagat ttttggattc ttggtcagga gacgttgtag aa atg aga 58
Met Arg
1

ccg tct att cag ttc ctg ggg ctc ttg ttg ttc tgg ctt cat ggt gct 106
Pro Ser Ile Gln Phe Leu Gly Leu Leu Leu Phe Trp Leu His Gly Ala

```
          5                  10                  15

cag tgt gac atc cag atg aca cag tct cca tcc tca ctg tct gca tct   154
Gln Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
     20                  25                  30

ctg gga ggc aaa gtc acc atc act tgc aag aca agc caa gac att aac   202
Leu Gly Gly Lys Val Thr Ile Thr Cys Lys Thr Ser Gln Asp Ile Asn
 35                  40                  45                  50

aag tat atg gct tgg tac caa cac aag cct gga aaa cgt cct agg ctg   250
Lys Tyr Met Ala Trp Tyr Gln His Lys Pro Gly Lys Arg Pro Arg Leu
                 55                  60                  65

ctc ata cat tac aca tct gca tta cag cca ggc atc cca tca agg ttc   298
Leu Ile His Tyr Thr Ser Ala Leu Gln Pro Gly Ile Pro Ser Arg Phe
             70                  75                  80

agt gga agt ggg tct ggg aga gat tat tcc ttc aac atc agc aac ctg   346
Ser Gly Ser Gly Ser Gly Arg Asp Tyr Ser Phe Asn Ile Ser Asn Leu
         85                  90                  95

gag cct gaa gat att gca act tat tat tgt cta cag tat gat aat ctg   394
Glu Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Asn Leu
    100                 105                 110

tgg acg ttc ggt gga ggc acc aag ctg gaa atc aaa cg ggctgatgct     442
Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
115                 120                 125

gcaccaactg tatccatctt cccaccatcc acccgggatc c                     483

<210> 52
<211> 126
<212> PRT
<213> Mouse

<400> 52
Met Arg Pro Ser Ile Gln Phe Leu Gly Leu Leu Leu Phe Trp Leu His
 1               5                  10                  15
Gly Ala Gln Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
            20                  25                  30
Ala Ser Leu Gly Gly Lys Val Thr Ile Thr Cys Lys Thr Ser Gln Asp
        35                  40                  45
Ile Asn Lys Tyr Met Ala Trp Tyr Gln His Lys Pro Gly Lys Arg Pro
    50                  55                  60
Arg Leu Leu Ile His Tyr Thr Ser Ala Leu Gln Pro Gly Ile Pro Ser
65                  70                  75                  80
Arg Phe Ser Gly Ser Gly Ser Gly Arg Asp Tyr Ser Phe Asn Ile Ser
                85                  90                  95
Asn Leu Glu Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp
            100                 105                 110
Asn Leu Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
        115                 120                 125


<210> 53
<211> 470
<212> DNA
```

<213> Mouse

<220>
<221> CDS
<222> (1)...(432)

<400> 53
```
atg aaa tgc agc tgg gtc atg ttc ttc ctg atg gca gtg gtt aca ggg   48
Met Lys Cys Ser Trp Val Met Phe Phe Leu Met Ala Val Val Thr Gly
 1               5                  10                  15

gtc aat tca gag gtt cag ctg cag cag tct ggg gca gag ctt gtg aag   96
Val Asn Ser Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys
            20                  25                  30

cca ggg gcc tca gtc aag ttg tcc tgc aca gct tct ggc ttc aac att   144
Pro Gly Ala Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile
        35                  40                  45

aaa gac acc tat ata cac tgt gtg aag cag agg cct gaa cag ggc ctg   192
Lys Asp Thr Tyr Ile His Cys Val Lys Gln Arg Pro Glu Gln Gly Leu
    50                  55                  60

gag tgg att gga agg att gat cct gcg aat ggt tat act aaa tat gac   240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Asn Gly Tyr Thr Lys Tyr Asp
65                  70                  75                  80

ccg aag ttc cag ggc aag gcc act ata aca gct gac aca tcc tcc aac   288
Pro Lys Phe Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn
                85                  90                  95

aca gcc tac ctg cag ctc agc agc ctg aca tct gag gac act gcc gtc   336
Thr Ala Tyr Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val
            100                 105                 110

tat ttc tgt gct aga gag gga tat tat ggt aac tac ggg gtc tat gct   384
Tyr Phe Cys Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala
        115                 120                 125

atg gac tac tgg ggt caa gga acc tca gtc acc gtc tcc tca gcc aaa   432
Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Ala Lys
    130                 135                 140

acgacacccc catctgtcta tccactggcc cgggatcc                        470
```

<210> 54
<211> 144
<212> PRT
<213> Mouse

<400> 54
```
Met Lys Cys Ser Trp Val Met Phe Phe Leu Met Ala Val Val Thr Gly
 1               5                  10                  15
Val Asn Ser Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys
            20                  25                  30
Pro Gly Ala Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile
        35                  40                  45
Lys Asp Thr Tyr Ile His Cys Val Lys Gln Arg Pro Glu Gln Gly Leu
    50                  55                  60
```

```
Glu Trp Ile Gly Arg Ile Asp Pro Ala Asn Gly Tyr Thr Lys Tyr Asp
65                  70                  75                  80
Pro Lys Phe Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn
                85                  90                  95
Thr Ala Tyr Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val
            100                 105                 110
Tyr Phe Cys Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala
        115                 120                 125
Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Ala Lys
    130                 135                 140


<210> 55
<211> 106
<212> PRT
<213> Homo sapiens

<400> 55
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Leu Gly
 1               5                  10                  15
Gly Lys Val Thr Ile Thr Cys Lys Thr Ser Gln Asp Ile Asn Lys Tyr
            20                  25                  30
Met Ala Trp Tyr Gln His Lys Pro Gly Lys Arg Pro Arg Leu Leu Ile
        35                  40                  45
His Tyr Thr Ser Ala Leu Gln Pro Gly Ile Pro Ser Arg Phe Ser Gly
    50                  55                  60
Ser Gly Ser Gly Arg Asp Tyr Ser Phe Asn Ile Ser Asn Leu Glu Pro
65                  70                  75                  80
Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Asn Leu Trp Thr
                85                  90                  95
Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
            100                 105


<210> 56
<211> 107
<212> PRT
<213> Homo sapiens

<400> 56
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1               5                  10                  15
Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ile Lys Tyr
            20                  25                  30
Leu Asn Trp Tyr Gln Gln Thr Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45
Tyr Glu Ala Ser Asn Leu Gln Ala Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60
Ser Gly Ser Gly Thr Asp Tyr Thr Phe Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Gln Ser Leu Pro Tyr
                85                  90                  95
Thr Phe Gly Gln Gly Thr Lys Leu Gln Ile Thr
            100                 105


<210> 57
<211> 106
<212> PRT
```

<213> Homo sapiens

<400> 57
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Lys Thr Ser Gln Asp Ile Asn Lys Tyr
            20   25   30
Met Ala Trp Tyr Gln Gln Thr Pro Gly Lys Ala Pro Arg Leu Leu Ile
        35   40   45
His Tyr Thr Ser Ala Leu Gln Pro Gly Ile Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Arg Asp Tyr Thr Phe Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Asn Leu Trp Thr
                85   90   95
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 58
<211> 6
<212> PRT
<213> Homo sapiens

<400> 58
Arg Ile Arg Val Glu Lys
 1   5

<210> 59
<211> 123
<212> PRT
<213> Homo sapiens

<400> 59
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr
            20   25   30
Tyr Ile His Cys Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
        35   40   45
Gly Arg Ile Asp Pro Ala Asn Gly Tyr Thr Lys Tyr Asp Pro Lys Phe
    50   55   60
Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
65   70   75   80
Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys
                85   90   95
Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala Met Asp Tyr
            100   105   110
Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser
        115   120

<210> 60
<211> 119
<212> PRT
<213> Homo sapiens

<400> 60

```
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Gln Arg Leu Glu Trp Met
        35                  40                  45
Gly Trp Ile Asn Ala Gly Asn Gly Asn Thr Lys Tyr Ser Gln Lys Phe
    50                  55                  60
Gln Gly Arg Val Thr Ile Thr Arg Asp Thr Ser Ala Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Gly Gly Tyr Tyr Gly Ser Gly Ser Asn Tyr Trp Gly Gln Gly
            100                 105                 110
Thr Leu Val Thr Val Ser Ser
        115
```

<210> 61
<211> 123
<212> PRT
<213> Homo sapiens

<400> 61

```
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp Thr
            20                  25                  30
Tyr Ile His Trp Val Arg Gln Ala Pro Gly Gln Arg Leu Glu Trp Met
        35                  40                  45
Asx Arg Ile Asp Pro Ala Asn Gly Tyr Thr Lys Tyr Asp Pro Lys Phe
    50                  55                  60
Gln Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Ala Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala Met Asp Tyr
            100                 105                 110
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

<210> 62
<211> 6
<212> PRT
<213> Homo sapiens

<400> 62

```
Phe Asn Ile Lys Gly Ala
 1               5
```

<210> 63
<211> 6
<212> PRT
<213> Homo sapiens

<400> 63

```
Phe Asn Ile Lys Ala Phe
```

1 5

<210> 64
<211> 406
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (16)...(393)

<400> 64
aagcttgccg ccacc atg aga ccg tct att cag ttc ctg ggg ctc ttg ttg 51
Met Arg Pro Ser Ile Gln Phe Leu Gly Leu Leu Leu
1 5 10

ttc tgg ctt cat ggt gct cag tgt gac atc cag atg aca cag tct cca 99
Phe Trp Leu His Gly Ala Gln Cys Asp Ile Gln Met Thr Gln Ser Pro
15 20 25

tcc tca ctg tct gca tct gta gga gat aga gtc acc atc act tgc aag 147
Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys
30 35 40

aca agc caa gac att aac aag tat atg gct tgg tac caa cag aca cct 195
Thr Ser Gln Asp Ile Asn Lys Tyr Met Ala Trp Tyr Gln Gln Thr Pro
45 50 55 60

gga aaa gct cct agg ctg ctc ata cat tac aca tct gca tta cag cca 243
Gly Lys Ala Pro Arg Leu Leu Ile His Tyr Thr Ser Ala Leu Gln Pro
65 70 75

ggc atc cca tca agg ttc agt gga agt ggg tct ggg aga gat tat act 291
Gly Ile Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Arg Asp Tyr Thr
80 85 90

ttc acc atc agc agc ctg cag cct gaa gat att gca act tat tat tgt 339
Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys
95 100 105

cta cag tat gat aat ctg tgg acg ttc ggt caa ggc acc aag gtg gaa 387
Leu Gln Tyr Asp Asn Leu Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
110 115 120

atc aaa cgtgagtgga tcc 406
Ile Lys
125

<210> 65
<211> 126
<212> PRT
<213> Homo sapiens

<400> 65
Met Arg Pro Ser Ile Gln Phe Leu Gly Leu Leu Leu Phe Trp Leu His
1 5 10 15
Gly Ala Gln Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser

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            20                  25                  30
Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Thr Ser Gln Asp
        35                  40                  45
Ile Asn Lys Tyr Met Ala Trp Tyr Gln Gln Thr Pro Gly Lys Ala Pro
    50                  55                  60
Arg Leu Leu Ile His Tyr Thr Ser Ala Leu Gln Pro Gly Ile Pro Ser
65                  70                  75                  80
Arg Phe Ser Gly Ser Gly Ser Gly Arg Asp Tyr Thr Phe Thr Ile Ser
                85                  90                  95
Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp
            100                 105                 110
Asn Leu Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
        115                 120                 125
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<210> 66
<211> 454
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (16)...(441)

<400> 66

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aagcttgccg ccacc atg gac tgg acc tgg cgc gtg ttt tgc ctg ctc gcc  51
                Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala
                 1               5                  10

gtg gct cct ggg gcc cac agc cag gtg caa cta gtg cag tcc ggc gcc   99
Val Ala Pro Gly Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala
         15                  20                  25

gaa gtg aag aaa ccc ggt gct tcc gtg aaa gtc agc tgt aaa gct agc   147
Glu Val Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser
     30                  35                  40

ggt ttc aac att aaa gac acc tat ata cac tgg gtt aga cag gcc cct   195
Gly Phe Asn Ile Lys Asp Thr Tyr Ile His Trp Val Arg Gln Ala Pro
 45                  50                  55                  60

ggc caa agg ctg gag tgg atg gga agg att gat cct gcg aat ggt tat   243
Gly Gln Arg Leu Glu Trp Met Gly Arg Ile Asp Pro Ala Asn Gly Tyr
                 65                  70                  75

act aaa tat gac ccg aag ttc cag ggc cgg gtc acc atc acc gca gac   291
Thr Lys Tyr Asp Pro Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp
             80                  85                  90

acc tct gcc agc acc gcc tac atg gaa ctg tcc agc ctg cgc tcc gag   339
Thr Ser Ala Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu
         95                  100                 105

gac act gca gtc tac tac tgc gcc aga gag gga tat tat ggt aac tac   387
Asp Thr Ala Val Tyr Tyr Cys Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr
     110                 115                 120

ggg gtc tat gct atg gac tac tgg ggt caa gga acc ctt gtc acc gtc   435
Gly Val Tyr Ala Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
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125 130 135 140

tcc tca ggtgagtgga tcc 454
Ser Ser

<210> 67
<211> 142
<212> PRT
<213> Homo sapiens

<400> 67
Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
1 5 10 15
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
20 25 30
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Asn Ile
35 40 45
Lys Asp Thr Tyr Ile His Trp Val Arg Gln Ala Pro Gly Gln Arg Leu
50 55 60
Glu Trp Met Gly Arg Ile Asp Pro Ala Asn Gly Tyr Thr Lys Tyr Asp
65 70 75 80
Pro Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Ala Ser
85 90 95
Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
100 105 110
Tyr Tyr Cys Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala
115 120 125
Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
130 135 140

<210> 68
<211> 109
<212> PRT
<213> Homo sapiens

<400> 68
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Leu Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Asp Ile Ser Asn
20 25 30
Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Gly Ser Pro Lys Leu Leu
35 40 45
Ile Tyr Tyr Ala Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser
50 55 60
Gly Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu
65 70 75 80
Gln Glu Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro
85 90 95
Pro Arg Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 69
<211> 130
<212> PRT
<213> Homo sapiens

<220>
<221> VARIANT
<222> 32, 33
<223> Xaa = Any Amino Acid

<400> 69
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ser Leu Val Xaa
            20   25   30
Xaa Ser Ile Ser Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys
        35   40   45
Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Ser Leu Glu Ser Gly Val
    50   55   60
Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Ser Leu Glu Ser Gly Val
65   70   75   80
Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
                85   90   95
Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
            100   105   110
Tyr Asn Ser Leu Pro Glu Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
        115   120   125
Ile Lys
    130

<210> 70
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<221> VARIANT
<222> 106, 120
<223> Xaa = Any Amino Acid

<400> 70
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr
            20   25   30
Tyr Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
        35   40   45
Gly Arg Ile Asp Pro Ala Asn Gly Asn Thr Lys Tyr Asp Pro Lys Phe
    50   55   60
Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
65   70   75   80
Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Gly Tyr Tyr Tyr Tyr Asp Ser Xaa Val Gly Tyr Tyr Ala Met
            100   105   110
Asp Tyr Trp Gly Gln Gly Thr Xaa Val Thr Val Ser Ser
        115   120   125

<210> 71
<211> 129
<212> PRT
<213> Homo sapiens

<220>
<221> VARIANT
<222> 115
<223> Xaa = Any Amino Acid

<400> 71

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Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20                  25                  30
Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Trp Ile Asn Pro Tyr Gly Asn Gly Asp Thr Asn Tyr Ala Gln Lys
    50                  55                  60
Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Thr Ser Thr Ala
65                  70                  75                  80
Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr
                85                  90                  95
Cys Ala Arg Ala Pro Gly Tyr Gly Ser Gly Gly Gly Cys Tyr Arg Gly
            100                 105                 110
Asp Tyr Xaa Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
        115                 120                 125
Ser
```